(12) EUROPEAN PATENT APPLICATION

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(54) Methods and probes for detecting nucleic acids.

(57) An in solution hybridization method utilizes two
soluble oligonucletide probes. One of the probes has
a homopolynucleotide tail which is captured by a
solid support coated with a complementary homo-
polynucleotide. A ribosomal RNA sequence specific
to M. pneumoniae and synthetic probes complemen-
tary thereto are provided. Methods are provided for
specifically identifying the presence of Mycoplasma
pneumoniae 16S ribosomal RNA in a sample by
using at least one synthetic nucleic acid probe com-
plementary to the 16S ribosomal RNA in a hybridiza-
tion assay. The methods comprise providing at least
one synthetic probe which has a sequence com-
plementary to at least a portion of a ribosomal RNA
sequence specific to M. pneumoniae.

EP 0 305 145 A3

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
X	NUCLEIC ACIDS RESEARCH, vol. 14, no. 12, 1986, pages 5037-5048, IRL Press Ltd, Oxford, GB; A.-C.SYVÄNEN et al.: "Fast quantification of nucleic acid hybrids by affinity-based hybrid collection" * Whole article * --	1-6	C 12 Q 1/68// C 07 H 21/02
X	EP-A-0 139 489 (ORTHO DIAGNOSTIC SYSTEMS INC.) * Whole document * --	1-6	
X	GB-A-2 169 403 (ORION-YHTYMA OY) * Whole document * --	1-6	**TECHNICAL FIELDS SEARCHED (Int Cl.4)**
Y	EP-A-0 124 221 (M. BLAIR) * Whole document * --	1-6	C 12 Q G 01 N
X	J. GEN. MICROBIOL. vol.133,no.7, July 1987, pages 1969-1974, SGM; U.B. GÖBEL et al.: "Oligonucleotide probes complementary to variable regions of ribosomal RNA discriminate between Mycoplasma species" * Whole article * ./.	7-11	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	06-02-1990	OSBORNE

CGK00011061

European Patent

Office

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.

namely claims:

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

X | LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.

namely:

1. Claims 1-6: a solution hybridization assay method
2. Claims 7-11: detection of mycoplasm using nucleic
   acid probes

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.

namely claims:

☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

namely claims:

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication. where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl⁴)
X	EP-A-0 250 662 (THE REGENTS OF UNIV. OF CALIFORNIA) * Whole document *	7-11	
P,X	EP-A-0 272 009 (HOGAN et al.) * Claims 1-34, 84-102 * --	7-11	
Y	CHEMICAL ABSTRACTS, vol. 107, no. 21, November 1987, page 175, abstract 191929v, Columbus, Ohio, US; U. GOEBEL et al.: "Synthetic oligonucleotide probes complementary to rRNA for group- and species-specific detection of mycoplasmas" & ISR. J. MED. SCI. 1987, 23(6), 742-6 * Whole abstract * --	7-11	
Y	CHEMICAL ABSTRACTS, vol. 106, no. 23, June 8,1987, page 360, abstract 192079j, Columbus, Ohio, US; H.C. HYMAN et al.: "DNA probes for detection and identification of mycoplasma pneumoniae and mycoplasma genitalium" & J. CLIN. MICROBIOL. 1987,25(4), 726-8 * Whole abstract * ---------	7-11	

	TECHNICAL FIELDS SEARCHED (Int. Cl⁴)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner